

Amendments To The Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

Claims 1-5 (canceled)

6. (previously presented) A method for preparing a porous acicular mullite composition having an improved thermal shock factor, the method comprising,

a) forming a mixture of one or more precursor compounds having the elements present in mullite and a property enhancing compound comprising talc.

b) shaping the mixture into a porous green shape,

c) heating the porous green shape of step (b) under an atmosphere having a fluorine containing gas and to a temperature sufficient to form a mullite composition comprised substantially of acicular mullite grains that are essentially chemically bound, wherein an element of the property enhancing compound is incorporated into a glassy grain interface phase of the porous acicular mullite composition.

7. (previously presented) The method of Claim 6 wherein the property enhancing compound is talc.

Claims 8-10 (canceled)

11. (previously presented) A method for preparing a porous acicular mullite composition having an improved thermal shock factor, the method comprising,

a) forming a mixture of one or more precursor compounds having the elements present in mullite and a property enhancing compound, the property enhancing compound containing an element selected from the group consisting of Mg, Ca, Fe, Na, K, Ce, Pr, Nd, Sm, Eu, Gd, Tb, Dy, Ho, Er, Tm, Yb, Lu, B, Y, Sc, La and combination thereof.

b) shaping the mixture into a porous green shape,

Application No. 10/551,728
Amendment dated January 8, 2009
After Final Office Action of September 11, 2008

3

Docket No.: 61804A US

c) heating the porous green shape of step (b) under an atmosphere having a fluorine containing gas and to a temperature sufficient to form a mullite composition is comprised substantially of acicular mullite grains that are essentially chemically bound and said mullite composition has a ratio of Nd/Mg from about 0.1 to about 10 by weight.

Claims 12-32 (canceled)

33. (previously presented) A method for preparing a porous acicular mullite composition having an improved thermal shock factor, the method comprising,

a) forming a mixture of one or more precursor compounds having the elements present in mullite and a property enhancing compound, the property enhancing compound containing an element selected from the group consisting of Mg, Ca, Fe, Na, K, Ce, Pr, Nd, Sm, Eu, Gd, Tb, Dy, Ho, Er, Tm, Yb, Lu, B, Y, Sc, La and combination thereof.

b) shaping the mixture into a porous green shape,

c) heating the porous green shape of step (b) under an atmosphere having a fluorine containing gas and to a temperature sufficient to form a mullite composition comprised substantially of acicular mullite grains that are essentially chemically bound and said mullite composition has a ratio of Fe/Mg from about 0.5 to about 1.5 by weight the Fe and Mg being present as oxides.

34. (previously presented) The method of Claim 33, wherein the Fe and Mg are present in an amorphous oxide glassy phase.

35. (previously presented) The method of Claim 8, wherein an element of the property enhancing compound is incorporated into a glassy grain interface phase of the porous acicular mullite composition.

36. (previously presented) The method of Claim 11, wherein an element of the property enhancing compound is incorporated into a glassy grain interface phase of the porous acicular mullite composition.

Application No. 10/551,728
Amendment dated January 8, 2009
After Final Office Action of September 11, 2008

4

Docket No.: 61804A US

37. (previously presented) The method of Claim 33, wherein an element of the property enhancing compound is incorporated into a glassy grain interface phase of the porous acicular mullite composition.